Allen

STEPS

TO THE

Medical Platform.

AN

ADDRESS

BY

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NULLA VESTIGIA RETRORSUM.

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NOTE.—Though published "by request," no one is responsible for what is herein contained, except the author himself. Whoever may take up this little pamphlet, is requested to read it carefully, or not at all. Oversight of this literary and scientific justice, subjected the "Observations on the Medical Platform" to a construction which is simply ludicrous in its lachrymose fogeyism. *Nullius addictus jurare in verba magistri*—the author invokes the sanction of no authority but the single name upon the title page.

ADDRESS.

FONTENELLE somewhere remarks: "There is no subject on which men ever come to form a reasonable opinion, until they have once exhausted all the absurd views which it is possible to take of it. What follies should we not be repeating at this day, if we had not been anticipated in so many of them by the ancient philosophers!" Indeed, Varro originated the remark far back into antiquity: *Nihil tam absurde dici potest quod non dicatur ab aliquis philosophorum.*

Whatsoever the subject of investigation, unless the darkness enclosing it was lighted up by the rays of inspiration, there has still been present this tortuous labyrinthine path in which the inquirer seemed necessitated to grope his uncertain way. Intellectual ability failed to supply the needed clue—great powers of perception, acuteness of observation and profundity of thought fell short of truth, except by accidental stumbling upon it as undistinguishable from surrounding errors.

We have no means of determining whether the great lights of antiquity were most impressed by the truths, or the falsities, which they embraced. One thing is evident, philosophers have supported crude absurdities with precisely the same armory of reasoning as when truth happened to be sustained. The inexorable and perplexing dilemmas of Socrates, the artistic and almost mathematical syllogism of Aristotle, the speculative but sublime dialectics of Plato, with all the varied forms of thought which were woven from them, involved myriad errors as their constant, ever present, correlative.

Filled with a sense of the utter futility of all these methods of arriving at truth, the elder Pliny wrote in despairing terms: "Man is a contradiction, the most wretched of creatures;

since the other creatures have no wants transcending the bounds of their nature. Man is full of desires and wants, that reach to infinity, and can never be satisfied. His nature is a lie—uniting the greatest poverty with the greatest pride. Among these so great evils, the best thing God has bestowed upon man, is the power of taking his own life?"

But now and then a scintilla of light did spring forth under the blows inflicted on the rock of speculation which, even in our times, there are men who will assert were not merely sparks, but great torches, better to be guided by than even the sun-light of to-day.

On the whole, however, the experience of the world would seem to be tending to this general conclusion, that great capacities, even when coupled with great efforts, do not involve the acquisition of truth as a necessary or even general consequent. Something more is seen to be wanting. And this, not only in the higher walks of metaphysical research, but moreover in ethics, politics, art and science. For the great principles ofsound philosophy tread not in single paths of knowledge only, but are truly cosmopolite. No man can fully acquire knowledge of one single branch, unless he is guided by principles which underlie, like primitive strata, all knowledges whatsoever their object.

In the infancy of the race, reliance is placed upon mere observation and intuition, whence, of course, it follows that mental superiority must be taken as the gauge by which to measure truth. Clashing conclusions are respectively supported by appeals to argument wherein the superior mind will at once assume pre-eminence.

But the force of intellect can only bring out the *apparent*—the *actual* is *utterly* independent of it. There is this difference between the unthinking ignorant, and the philosophical mind : the first receives the primary impression upon his senses as the ultimately real, the second creates a new set of appearances by the processes of thought. The creation may be as unreal as the elements before subjection to the ordeal of thought. Thus the human mind is intermediate between chaos on the one hand and a void upon the other. Here thoughtless ac-

ceptance of appearances, and there thoughtful rejection of *all* belief.

But all ancient and mediæval philosophy tended to one or the other of these extremes. The modes of speculation, culminating in Aristotle and Plato, diffused their influence over their own and subsequent ages. At rare intervals and in obscure places a glimpse of the real simplicity of the means for attaining truth would be discoverable, but speedily would be forgotten.

The high honor was reserved for comparatively recent times to point out the natural and easy methods of observation and reflection. The inductive philosophy as contradistinguished from the speculative, may be considered as the characteristic distinction between ancient and modern times.

Speculative philosophy causes the great intellects to loom far above contemporaries—the inductive is a leveller that makes the mind but an accident of knowledge. The speculative depends upon opinion—the inductive upon fact. The former dissipates the teachings of the senses into mysticism and unmeaning terms, the latter concentrates them to practical truths. One parades its great names and ingenious fancies, the other neglects men and crudities for consistent realities. There are those who are ever looking backward—who mistake antiquity for old age, and give past time the reverence which youth owes to gray hairs.

There are those who claim that the discordant fancies of ancient days are better to be trusted than the clear thoughts of our time. To all such let us commend the idea, that ours is the advanced age of the world, and the olden times are no more to be looked back upon for guidance than the mature man would seek instruction from the idle reveries of his boyhood. The inspired Apostle well said: "Forgetting those things which are behind, let us press *forward*."

Nor is this a merely flippant observation—the ideas of the present time are the result of a philosophical metamorphosis, as complete as that which converts the sluggish larva to the quick winged inhabitant of the summer air.

The tendency to look back to antiquity for instruction is precisely the same with that which urges "hero-worship," or an inordinate veneration for great men even in our own time. As the lover of antiquity at once concludes because some fortunate antique has escaped merited oblivion, that therefore he is to be looked upon as something akin to sacred and to be reverenced accordingly; so is there a tendency to single out here and there a contemporary, whose mental peculiarities happen to surpass those around, as an object of trust and imitation ever to be kept in mind.

Look for an instant at the result of this mode of reasoning, satisfactory as it is to the indolent mind. All antiquity is but a history of jarring and discordant notions, with scarcely a vestige of the ground work of nature beneath. Can we decide between them without at once assuming a superiority we affect to disclaim? Each opinion, every reason is to be subjected to our own judgment.

And so with regard to great men and high authorities—the conflict between them is such, that we must still come back to our own decision even before we can follow or imitate. There is no escape from this result,—in our own minds must the questions be tried and judgment rendered. "The noble and most sovereign reason" of each, is the final tribunal, irrespective of advocates, great or small, past or present. Hard—hard, indeed, would be the task, were truth an object as difficult of apprehension as all antiquity, and many of the present time, would have us believe. But it is not so:—"the way of Truth is plainness and brightness, the darkness and confusion are our own."

The votaries of ancient philosophy are wont to characterize the inductive system as mere classification, restricted to the contemplation of material objects. But this is by no means the case—it simply expresses the path which mind must take in arriving at truth of whatever kind. The Aristotelian dictum, embracing the syllogism after all the argument which has been expended upon it, cannot be extended, confessedly, to natural science, where its results may be disproved though it may be to abstract studies where results cannot be dis-

proved. But the inductive system applies to all, and ever indisputably takes precedence. It is worthy of remark that the only treatise on metaphysics, which can be relied on with hope of escaping absurd conclusions, is based upon an attempt at the inductive system. Classification, it is true, is a prime characteristic of this system, and deservedly so. Science is knowledge classified, and nothing may be said to be known unless it comes within orderly series. The true inductive system as expounded by the illustrious Bacon, embraces both "induction and deduction, analysis and synthesis, on the basis of fundamental axioms, forming the simple and sublime circle of his method, the method of nature and of God." Classification cannot take place without a process of thought, but the thought necessarily springs out of the contemplation of its objects and that is simply the induction.

We have fallen upon this train of remark, not undesignedly. Philosophy and medicine cannot be viewed independently of each other—the condition of medicine at any particular period is an index or exponent of the philosophy and general science of that period. So extensive are its general principles in their range, that its history must ever form an important part of the history of philosophy. "The Philosopher," says Aristotle, "should end with Medicine, the Physician commence with Philosophy." This grows out of the circumstance that the truths of medicine depend, for their discovery and reception, upon precisely the same kind of observation and preparation as all others. When general philosophy is speculative, dreamy and mythical, then will medicine be theoretical, vague and mysterious. Where the former is observant, acute and grasping, there will the latter be perspicuous, accurate and comprehensive.

It is with this idea uppermost, that elsewhere we have said: "Medicine is to be looked upon and studied, precisely as all other arts and sciences are looked upon and studied. The truths upon which it is assumed to be based, are to be tested as all other truths are tested; and when they cannot abide the same, let them be mercilessly discarded." *

* Vid. Observ. on the Medical Platform, P. 24.

Undeniable as this proposition appears, it is humiliating in the extreme to professional pride to find in this middle of the nineteenth century, here and there a few who have so little confidence in their art, that they dare not come up and admit the test.

The "Trades Union" and the ghosts of the "Fathers" still appal them.

Let us consider whether there may not still be a chance for "orthodox" opinions, even after adopting our "Platform."

Among natural phenomena, DISEASE particularly interests the medical observer. It must be viewed, like other natural phenomena, as regulated in its rise, progress and termination, by laws, fixed and capable of being determined as any other natural laws. Though modified in form by a multitude of influences, which can only be limited by the permutations of circumstances in which man can be placed, nevertheless it takes a peculiar course—as a ball acted on by any number of forces takes a determinable direction, the resultant of all; or, as the planets, though subject to the attractions of every particle of matter in the universe, each assume a certain orbit and definite velocity of revolution.

By the agency of stimuli acting continually upon matter arranged in a particular manner, we see the functions duly performed and health present. Were no disturbing influences presented, the prevailing law of nature that, under similar conditions "like causes produce like effects," would render the living body as permanent in duration as the inorganic.

The "vital stimuli," heat, air, nutriment, moisture, light, electricity, &c., converted by the medium of organic matter into the wonderful varieties of functional action, would under fixed conditions perpetuate the ceaseless changes of the chemical elements of which the body is composed; the detachment of germs, the development, maturation and transformation of cells, in which consists the minute mechanism of the animal framework—would go on through unlimited time,—the dream of the alchemists would be resolved into reality—an immortality of material existence would be attained. But Nature has written change upon all her works. All forms of matter

must undergo progressive but endless mutations. Night succeeds the day, the seasons call each other in turn. The years vary in their changes, the centuries remould the face of the globe, and the geological cycles bury in its crust the strange forms of preceding vegetable and animal being.

With each of these pervading influences is necessarily associated modification of those agencies indissoluble from vital manifestation. The air and temperature, water and food, light and electricity, with all phases of force that act upon the body are varied in their impression, upon it,—and, still acting in subservience to natural law, mar and disarrange the harmonious changes of animal life. Thus different ages of the world, different years, and even different seasons of the same year, are characterized by broad distinctions in their diseases—distinctions, on the whole, as characteristic as the varieties of animal and vegetable forms in the several geological periods.

These are the noticeable phenomena produced by the vital stimuli in their larger manifestations, and are readily admitted to be under the control of enduring laws. But it must have occurred to the careful observer, that the laws of nature are comprehensive enough to grasp the most minute and apparently eccentric, as well as the most vast and apparently uniform phenomena.

All changes which force can produce or matter manifest, whatever the apparent irregularity or eccentricity, are but the direct incidents of natural law, and as such are capable of reference, now or hereafter, to their unequivocal causes. To the casual observer—accustomed to hear disease termed an abnormal or unnatural state, it may seem a "paradox" or a dogma" to speak of it as under the operation of natural laws.—The expression, notwithstanding, is strictly and scientifically correct.

All the various influences which co-operate with matter in producing the active phenomena of life, having each an especial dynamic efficiency liable to be indefinitely modified by coincident conditions, ordinarily effect orderly results, but sometimes operating in excess, sometimes deficiently, or again

through an improper medium, they in equal conformity to law prove deleterious. The fortunate or unfortunate issue depends upon this indefinite range of action. As beings endowed with organic life are subjected in less or greater degree to the variation of these influences, we see them manifesting the accidental evils of the system in a strictly correspondent ratio. In the vegetable kingdom, where the range of action and influences is nearly as distinct and precise as in the inorganic, few marks of disease appear. The native plant or shrub is almost absolutely free, but change the associated conditions by transplantation or culture, and modifications in structure or action, or both, appear,that attest at once their subjection to the prevailing law. Thus, too, the lowest varieties of animal life placed under more definite conditions, and evincing characteristic and simple actions only, with almost the insensibility of vegetable growths, are vastly less liable to disease than when rising higher in the scale mutually dependent results, in great variety, are to be effected by the same influences.

The observation is sufficiently notorious that, with the advance of civilization and intelligence, diseases become more numerous and more complicated or recondite. The physical affections of monades or savages are fewer in number, and more easily combatted than those of the inhabitants of cultivated regions. Not only this, but different classes of people in the same country, city or town, even, present material differences in their diseases, not less, indeed, than in their habits physical, moral and intellectual. The very enjoyments, sensual and mental, which we attain by subduing to our service the laws of matter and of mind, control ourselves in turn by subjecting us to the result of their aberrations, whilst acting in concordance with those influences that would tend to keep us on the dead level of mere existence.

"Thus it appears," (says an anonymous writer, whom I may be pardoned for quoting, on this point only, with assent and approbation,) "that the very fineness of man's constitution, that which places him in such a high relation to the mundane economy, and makes him the vehicle of so many delightful

sensations—it is this which makes him liable to the incursions of disease."

Careful observers and investigators of the process of cell development and the circumstances which modify its forms, have latterly opened up a new and rich vein of inquiry by the discovery that this minute agent under the influence of particular stimuli tends ever to the assumption of a particular form, and the elaboration of a particular fluid.

The individual cell is the type of organic life, and in its changes, every function of the most highly developed animal is expressed. There is a type to each great division of the organic kingdom, to each family, order, genus and species.—To each there are definite conditions of existence in its typical form; that is to say, the cells, developing the individuals of each type, do so under certain circumstances,—*change the conditions, and the cells develop different forms tending to the type of those usually developed under similar conditions.*

When the transformation is consistent with the usual function of the part then it is little noticed, but when inconsistent with the same, it constitutes disease. That which is the natural or healthy form in one being, developed in another by the equable operation of the same all pervading laws involves impairment and, perhaps, dissolution. Thus the causes of one existence determine the cessation of another.

"The Universal cause
"Acts not by partial, but by general laws.

Indeed, whatever point of view be taken in the study of disease, it is invariably to be found consisting of a series of results regularly brought about by the operation of the creative laws of life.

Pathologists have ever failed accurately to draw the line of demarcation between health and disease: definitions fail, because the differences are but phases of normal organic life.

It is therefore fitting to view the phenomena of disease with a single, unprejudiced eye, not as the product of marvellous or miraculous causes; not as the means of revenge of wrathful deities as anciently believed, and, even now, tacitly admitted by the more ignorant classes of mankind; not as essen-

tial mysteries locked up forever with the unapproachable arcana of Creative Intelligence,—and hence to be combatted, if at all, by marvels and miracles, by appeasing charms, by mysteriously operating agencies, by strange influences and fortuitous appliances ; but, rather, as the orderly effect of forces as subject to observation and discoverable as gravitation and affinity, acting upon matter as tangible to examination as the elements of inorganic being,—and therefore to be controlled, through the insight which science affords, with as much certainty as we can regulate the reaction of physical agencies upon inanimate objects.

Well did old Hesiod say : " The earth is full of evils, and full the sea ; diseases freely rage with men both by day and by night ; " for all the varied manifestations of power, whether in the invisible atmosphere, the mobile fluids or the solid forms of being, in their larger or lesser influences, may disturb the equable conditions of healthy life. And thus as analysis shows that the most distinguishing characteristic of man is his capacity to subdue the physical forces of the elements to his service, advancing higher and higher in civilizations as he perfects his mastery, so will he, bye and bye, convert even the causes of disease, not merely into innocuous agencies, but, moreover render them subservient to still higher development of his material and mental organization.

If there be any such thing as a medical science, it most certainly is resolvable into these definite particulars ; to ascertain the structure and action of the body in health with the influences which sustain that structure and action ; again, morbid changes of that structure and action, and their causes ; in the third place, how to ward off or counterbalance morbific impressions and remove the deleterious changes they may have induced ; and finally how to render even the forces which now beget derangement hereafter subservient to heightened development and prolonged existence.

It would seem that each of these particulars is a legitimate object of scientific research, requiring only the ordinary safeguards of study. Unfortunately, however, the practice of the art being one of the several means of gaining livelihood and

position in society, it has been most generally deemed necessary to surround it with trappings and paraphernalia utterly foreign to the science itself. Hence the great truths within are oftentimes hidden, and the uninitiated observer detecting the falsity of the surroundings, jumps at the conclusion that there is nothing of reality within.

"The history of Medicine," says Sir Wm. Hamilton, "on the one hand is nothing else than a marvelous History of Variations ; and on the other, only a still more marvelous history of how every successive variation, has, by medical bodies, been first furiously denounced and, (though always laughed at by wiser wits,) then bigotedly adopted. Homœopathy and the Water Cure are now and here, blindly anathematized as heretical ; in the next generation, it is not improbable, that these same doctrines may be no less blindly preached as exclusively orthodox ;—Such is poor human nature! Such is corporate, such is medical authority!" And this picture, sufficiently devoid of flattery as it most certainly is, he explains by an imputation no less free from offence, viz : "The opinions of men in general, are, in general, only a reflex of their interests." Or as he says "Hobbes has well observed,—"were it for the profit of a governing body, that the three angles of a triangle should not be equal to two right angles, the doctrine that they were, would, by that body, inevitably be denounced as false and pernicious."

However we may attempt to disguise or palliate the facts of the case, it is not to be concealed that a very considerable portion of the community entertain something like this opinion of our profession. The best are, too often, looked upon but as learned charlatans, or fanatical adherents to whatsoever crude opinion happens for the time to be in the ascendancy—false pride and self-interest forbidding all progress.

Upon a time a sailor found his way where a legerdemain operator was showing off to a gaping auditory his necromantic feats. Whilst in the middle of some astounding trick, some gunpowder, stored in the cellar beneath, accidentally ignited, and an explosion resulted, which of course dispersed the meeting in unusual haste. As it happened, Jack was blown

through an open window into an adjoining garden where he alighted unhurt. Thinking the change in his *locus in quo* only an episode in the performance, he exclaimed in great astonishment: "What the d—l will the funny fellow do next?"

And so, as one phantom after another has been evoked by medical teachers, and chased through all the bewildering mazes of hypothesis until it has vanished in the halo surrounding its successor, the community have sympathizingly inquired—"What next?"

It is sometimes fortunate, sometimes unfortunate, that men, parties, classes and even nations are judged by their antecedents rather than by their existing condition. Where a clear historical escutcheon can be presented, the issue is favorable to both, but under opposite circumstances the contrary.

Now it is simply preposterous to suppose that the public judge of the medical profession by any other rules than those employed in judging of other classes, cited to their tribunal.

Individuals may so warp judgement by prejudice and passion that they may entertain the most inconsistent opinions.—But the masses of mankind are moved mainly by truth, or what assumes to them its likeness. However it may displease the pride of the few who in every age arrogate to themselves the sole possession of truth, it may be fearlessly laid down as a philosophical axiom, that the ideas which pervade all the nooks and corners of society, are full as likely to be correct as those which spring up amid the teeming fancies of assumed scholars and men of genius. Indeed, there are a vast number of foolish and false opinions, of which highly cultivated minds only are susceptible. Whenever ideas gain ascendancy in the popular mind, they are far more worthy of attention than when sustained by the *quasi* mechanical argumentation of so called great men. Really great men are the product of the times, as the fruit of the tree, and not, as some seem to suppose, miraculous gifts of Deity disunited by their mental qualities from the rest of humanity. It is not the mere possession, or facility in inventing, advancing, or supporting ideas that constitutes the great and useful, (great, because useful) man, but the *kind of ideas* entertained. Some men attain

factitious repute by advancing startling novelties and defending them with energy and acuteness, or again by throwing false lustre around old errors, or by grave and dignified deprecation of innovation upon time (only) honored dogmas.—But this is shortlived fame, proverbially soon fading away—whilst ever the truly great mind, impressed by, and concentrating in itself the ideas which move the age, gains renewed grandeur by the lapse of years. Great men are the head waves on the surging tide of progress—there are those who are but the ripple, froth and foam upon the surface.

Hence, did the opinion that Medicine is but a higher kind of imposture, or drama of ever shifting scenes, or baseless fabric of suppositious art, manifest itself only in the harmless flings of wits and satirists, or the heavy lucubrations of mere scholars and writers, it might be passed over without comment as not necessarily involving even the shadow of truth. But when we find, on the contrary, that it is echoed by large classes of men, and that really great minds begin to propound the inquiry: "Are these things so?" and begin to speak and act as though an affirmative answer only could be returned, it behooves Medicine to come at once to trial, neither pleading want of jurisdiction on the part of the high court, nor even attempting to change the *venue*. Offenders, only, fear the award of an intelligent investigation.

Nor is this matter one of trivial import, to be decided one way or the other without great caution. The Science of Medicine, if there be one, is second to none other in importance—for as "all that a man hath will he give for his life," so all other knowledges, except that which interests the immortal part of his being, sink into comparative insignificance by the side of this. On the other hand if there be no proper Medical Science, the sooner this is proven, the better, for confidence in falsehood is ever most disastrous. Medicine can occupy no neutral ground—it is either all-important or contemptible. Some writer has observed, it is better to have no idea of Deity than one unworthy of him: whether this be admitted or not, certain it is, that in Medicine absolute ignorance is preferable to gross assumption and the sway of futile notions.

To medical men, particularly, the decision of this sphinx question of the times is of utmost interest. He who despises his art, whatever it may be, can never become a good artist, —neither can the means in the hands of the physician enure to their highest advantage, unless he is convinced of their unquestionable utility. The distrust of medical men, it is true, is apt to be confined to particular means or measures, and is attributed to their want of certainty or precision in operation ; but if carefully analyzed is seen to be resolved into a general distrust of the principles of the art. The great remedy of one year hiding its diminished head from the applause which greets the newly installed favorite of the next ;—the explanation of yesterday scorned to day, and fear that all will be equally ridiculed to-morrow, tend inevitably to doubt and despondency in the reflecting mind as to whether there is anything truly reliable at the base.

Now, unless there be an Art of Medicine and a Science within it—tangible, discoverable and demonstrable, there is no such thing as a difference between modes of practice, except in degrees of injury inflicted—there can be no such distinction drawn as good and bad practitioners. Who will take this ground?

Life and all its phenomena are dependent upon the reciprocal relations of certain material atoms, arranged in a particular mode, and certain forces ever acting upon them. When acting and reacting within certain limits, as determined by certain conditions, then health is present, and the constructive processes develop the living being to all the particulars of its species. But changed conditions modify the constructive processes resulting in disease. Return to the healthy standard is the curative process.

While health continues the organs perform their functions with harmonious regularity, but let a disturbing cause be presented, and, unless some countervailing force is supplied, derangement must ensue and remain in effect. Strictly speaking, there is no such thing possible as the cure of disease by the vital powers alone—the energies of the system ecrate no new forces unless secondary agencies are afforded.

'Nature only cures in peculiar circumstances and under certain conditions, whereas by art we are enabled to change the former and fulfill the latter. Many may recover without particular remedies or medical attendants, yet *none* without remedial measures—they have done some things and avoided others—and this is the essence of art. If they have followed precepts, they are those of art; if, on the contrary, they have abandoned themselves to their good fortune, this latter has snatched them from danger in approaching the precepts of art.' (Cabanis.) Apprehension and application of the conditions and circumstances conducive to restoration to health, is all that is necessary to confer the character of an art—and this may precede to some extent reduction of knowledge to classified series of facts. Thus the Art of Medicine, like others, may outrun, in its application and extent, the science upon which it is based, or into which its precepts are capable of being resolved. On the other hand, so long as the precepts of art are merely accidental or experimental in their character, not having been reduced to the immutable series of scientific truth, uncertainty and doubt must ever precede their application.—That this is the case in Medicine to a very considerable extent is an admission that need not detract, in the least, from confidence in those facts which have consolidated into scientific principles.

The prime difficulty is in carefully separating in the mind the isolated facts which experiment and observation have afforded, the hypotheses invented to account for them, or theories to include them, and, finally, the laws to which analysis and synthesis resolve them.

Medicine, as a whole, is a complex affair made up of each of these; and as it is liable to the errors involved in some, so is it entitled to the support afforded by the rest.

Perhaps very few, who object to the high character of Medicine, are aware of how much there is within it which falls strictly within the domain of fact and rigid scientific law.—Accustomed to hearing theories and hypotheses alternately defended and discarded; and seeing history filled with discus-

sion of the differences of opinions upon these points, it is supposed that the matters in dispute are the most important of all. But this is far from the case. As in polity, the exact position of boundary lines, involving only a small territory, has given rise to more wars than even questions of sovereignty over entire States, so in medicine, questions of comparatively trivial interest have caused more contention than the great original body of facts and laws. That crude theories and absurd hypotheses have arisen, obtained sway, and passed into contempt, to be succeeded by others, equally futile, again, and again, and again, is a matter noticeable as common to all sciences and all arts. From the nature of the subject, Medicine has been subject to the greatest variety. It has to do with recondite matters, wherein there is the greatest temptation to leave sober investigation and launch out into bold speculation, because the ordinary means of science are undiscovered. The human mind instinctively seeks causes for all phenomena, and where it fails to demonstrate, would grasp by sheer hypothesis, that it may have a stand point for future discovery.

Influenced to a limited degree by the founder of the Inductive System the profession found utilities, as he promised, not as before one by one, but in knots and clusters. But unfortunately the prejudices of the medical profession have never admitted the doctrines of induction in their most comprehensive extent, but have perpetuated even till now vastly too much of the old methods—relying upon theory and hypothesis, not as things suggestive of future inquiry and discovery, but as absolute guides or rules for practice, and even beyond this, to be reasoned upon as laws developing new truths and new applications to use. The greatest efforts have been put forth to generalize facts and phenomena into formulæ, convenient for use as the rule and compass, by which all effects may be measured and all unknown regions may be traversed.

But the great principles of health and disease, of life and death, refuse to be caged within the narrow confines of a rhetorical sentence, or simplified to well turned antithesis. Truth

may be dissected to skeleton forms, but its life will flee away under the speculative scalpel.

For facts with their wide spreading relations are, and must continue, the real basis of intellectual life; they are, and must continue its only fructifying aliment.

The time has gone by, and thank God! has gone by forever when it is necessary to invest truth with the paraphernalia of falsehood to secure its admission to confidence. There is enough to believe, that is worth believing, without succumbing to the idle prejudices of what may well be termed—organizations for the suppression of thought. Cannot this be clearly seen?

Thus it is seen that the Anatomical Structure of man constitutes a science of itself, though only a fraction of the medical Cyclopædia. The shape, size, position, relations, general and minute structure of each part; the occasional diversities within the limits of health, and the philosophical association of each with correspondent parts in other animals, are topics where all creeds and sects of medical men find common and indisputable study. Both to the surgeon and physician, all will admit, a knowledge of these is indispensable.

Again, the body is surrounded by various materials, some of which in life it receives into its interior, and into which after death it is decomposed. All substances influence it, and all forces may come in contact with it; and how can their effects be explained unless themselves understood? Hence Chemistry in all its range and all its minutiæ—the scientific history of all ponderable and imponderable agencies, must be investigated as essential preliminaries and constituent parts of the one great Science of Medicine. Neither can controversy arise here.

But as in Anatomy, the organs are to be studied in repose—so is it necessary in Physiology to study them in action.—The prominent motions evincing animal life; the movements of fluids in their channels, as common or peculiar to animals and vegetables; the motions, transformations and conduct of

the minute cells, which the microscope brings into view ; the changes which food and air undergo on being received within the body ; the nature and relations of the diverse fluids, their operations within and without ; the development of the embryo to the adult, of pulp to nerve and muscle, of cartilage to bone ; the separation of conjoint actions, and assignment of each to special organs ; the mysterious organization through which the mental part develops its influence, and the modes of its manifestation ; the influence of vital stimuli and all forces in promoting, retarding or modifying the action or composition of each, or all the organs ; and determination of all influences, whether of form, integral constitution, or of force, that maintain the equable and harmonious action of the several parts and of the entire system. Surely here is the science for a life's pursuit.

But, as one has well said : "Had there been no other animals, the nature of man would have been far more difficult to be understood," thus it is seen that they are also to be studied. The internal and active organs are removed from the sphere of our inquiries, except in rare and accidental cases. Hence we are led to search out the modes of action in animals having corresponding organs ; or if general likeness, but particular differences, obtain, then to seek for the differences and assign, if possible, the modified structure or conditions giving origin to them. Thus, little by little, are we led along, connecting structures and functions, of the first simplicity, with structures and functions of the last complexity ; contemplating life and organism, not in isolated instances, but in the linked series which they form—filling up one grand system, and rounding out the circle of animal life. And when, here and there, at intervals a few links are found wanting in the grand chain, the very absence indicates the route of discovery to other instances, perhaps in the unexplored regions of the earth, or buried with its fossil forms, or yet to appear, of individuals that would complete the wonderful catalogue, and fill up the vacant places in the symmetrical plan of organization. Perhaps it is safe to say, that there is no other single science which, at the present time, is more minutely known, and in

which the permanent trophies of inquiry are of more triumphant nature than this Physiology or the Science of Life.

To the study of Anatomy, Chemistry and Physiology, however, is yet to be joined that of disease, or Pathology, that science which includes all we may know or apprehend of those changes in the structure or action of parts or the whole of the animal framework, that impair perfection or tend to dissolution. All these are found to be reducible to series and their causes developed. At one time, variations of structure by direct injury, decomposing agents, or poisons are seen to prevent the toward impression of vital stimuli; or, these latter begin the difficulty, by similarly impairing structure. Sometimes impaired action is noticed with no manifest change of structure, or apparent modification of the sustaining forces of life.

By a little further examination, it is seen that, irregular as they may have first appeared, these disordered actions and changes frequently fall into groups capable of being distinguished as peculiar, thus affording natural families with subordinate divisions. Each group attended, in the main by particular changes in the material constituents of the body, and preceded or accompanied by particular conditions, becomes as definite an object of study, as newly discovered species of plants or animals, or new elements or compounds developed by the manipulations of the chemist.

Here and there a group may baffle even expert pathologists and become a *questio vexata;* just as botanists, zoologists and chemists may have difficulty in assigning a habitation and name to some refractory members of their usually orderly families.

In this department of science contention only can legitimately arise upon questions of fact—to be settled, as in all studies of nature, by reference to the senses and their report. The subject-matter is not within the appropriate range of hypothesis or theory: the laws of strict induction are here indispensable. The great difficulty has been a tendency to premature generalization from too few facts or observed phenomena.

Theory may include all known facts, and hypothesis may, apparently, fully account for them, but to establish a law, it becomes necessary to prove that the relation of facts is not only general but essential. A theory can govern no further than in the instances absolutely examined and included, whereas a law invariably includes and may be extended to a vast number of unexamined instances.

Thus of the great number of theories, invented since time immemorial to include the causes of disease and the changes involved, it is sufficient to say, that they were the product of a knowledge of facts, merely without instances contradictory, which may be almost innumerable, and yet be liable to overthrow at any time by the discovery of new facts. And indeed this may be freely admitted to be the case, with all preceding and all present theories upon this subject; nevertheless, the facts remain the same, and many of them have been referred to laws that can no more be shaken than any other demonstrated laws of nature.

Some men examine more minutely than others, and analyze more closely, but what both actually see impresses itself as nearly alike upon the sense of each, as are the eyes which look out from under their respective brains. But about things which the senses do not apprehend, but are to be created by thought, there ensues discordant opinion, only to be harmonized by leading back to the sources of knowledge, which in the natural world flow in from without, and not out from within—though oftentimes in reading the history of pathology, to our sore discomfiture, we find that very many have thought quite otherwise.

The signs by which disease is discovered are daily becoming more accurately defined; fanciful distinctions are being discarded and real ones pointed out; causes are being investigated and made known; changes in structure and action are progressively detected with greater minuteness; and thus Pathology advances with steady step to the goal of scientific perfection. To this general statement, it is no objection to urge that in many details there is a complexity which thus far

has eluded analysis. The wonder is not that so much remains mysterious, but that, in such an apparently obscure subject, so much has been wrested from the domain of ignorance and darkness. Consideration of what is really known upon this topic, notwithstanding the tortuous path by which discovery has wended its way, may well impress the sentiment:

> "Trust not the frantic or mysterious guide,
> Nor stoop a captive to the Schoolmen's pride;
> On Nature's wonders fix alone thy zeal:
> They dim not reason."

Acquaintance with the branches of Medical Science adverted to, will infallibly suggest many particulars, observance of which will ward off or prevent the incursions of disease. The whole science of Prophylaxis is but a corollary from them.

For example, Anatomy and Physiology teach that a particular chemical and mechanical arrangement of organic elements is indispensable to healthy action—the prophylactic principle is obvious, that decomposing and disturbing agencies are to be avoided. Again, Physiology shows that certain ranges of temperature; certain qualities of the atmosphere; certain kinds and amounts of food; a certain measure of moisture, and so on, are invariably requisite to the maintenance of life and health: Pathology shows that disordered actions and structural changes are accompanied or preceded by undue heat or cold, by improper kinds and qualtities of food or fluid, by particular contamination of the atmosphere, and so on; and out of this knowledge spontaneously springs Hygeine, with all its more or less absolute rules. Their perfection, of course, depends immediately on that of the preliminary knowledge. It is a matter of common sense to determine their application.

But even here much absurd speculation and hypothesis, based upon too few facts, may come in to throw suspicion over the results of knowledge; mainly by assuming certain influences as essential to health, which are merely accidental, to which the organs become habituated by continuance, involving what is, in fact of itself, disease. Thus the Russian, or the Hydropathist, gains a power of resistance to extremes of temperature, by accustoming himself to rush from

the hot bath to the snow drift or iced water. But this is gained at the expense of changes which rob parts of their exquisite sensibility, or seriously modify their structure. Thus also, the toper of alcoholic drinks finds their repetition necessary to digestive and mental energy, because they have induced such changes in his organization, that the regular action of the vital stimuli cannot produce their usual effect. Or again, the digestive apparatus of the Vegetarian rejects or fails to assimilate animal food, because habit has disqualified the organs from performing their appropriate function.

Nevertheless, with all proper allowances, it may be observed, that the laws of health and disease form the basis of all those valuable sanitary regulations, that have so wonderfully contributed to raise enlightened nations and individuals above the reverse.

It is a very common thing to hear alarmists and croakers bewail the degeneracy of the times, and the gradual deterioration of the race. Historians of the past are very apt to say: "There were giants in those days, with a measure of years to which ours are but a span!" Lugubrious comments upon the effeminacy of these latter times would fain convince us that the seeds of dissolution are already sown, needing only the lapse of years to ripen into a harvest of annihilating fruits.—But all speculation of this kind is but the spawn of diseased fancy. Reliable statistics have shown, much to the surprise of dreamers, that the opposite is the case.

Take for instance France, and from accurately kept tables of mortality it is shown that during the period from 1776 to 1843, (67 years,) the average annual increase in duration of human life has been *fifty-two days*, or in two thirds of a century—*nine and one half years*. "What a fact have we here!" well exclaims Prof. Clark, "Even during that dread period in which the death angel assumed the cap of liberty, and taxed the arts for new inventions to destroy life, and during the succeeding thirteen years, in which the war spirit reaped an almost unprecedented harvest" the principles of science "saved more than war and the delirious spirit of freedom could destroy."

Not less surprizing are the results of statistics in other countries. In England the reduction in number of deaths is seen to be 28 per cent. in half a century only.

The deaths in	England	in	1690,	were	1	in	33—in 1848,	1 in 47
do	France	in	1776,	were	1	in	25½—in 1848,	1 in 42
do	Germany	in	1788,	were	1	in	32—in 1848,	1 in 40
do	Sweden	in	1760,	were	1	in	34—in 1848,	1 in 41
do	R. States	in	1767,	were	1	in	21½—in 1829,	1 in 28
do	London	in	1690,	were	1	in	24—in 1844,	1 in 44
do	Paris	in	1650,	were	1	in	25—in 1820,	1 in 32
do	Berlin	in	1775,	were	1	in	28—in 1824,	1 in 34
do	Vienna	in	1750,	were	1	in	20—in 1829,	1 in 25
do	Rome	in	1770,	were	1	in	21—in 1828,	1 in 31
do	Geneva	in	1670,	were	1	in	18—in 1821,	1 in 40

A glance at the table will suffice to convince that co-equal with the advance of knowledge of health and disease, has been the improvement manifested in visible lengthening of human life. And this, notwithstanding a heightened civilization, has complicated the causes and increased the susceptibilities to disease.

This matter is one of remarkable interest in a political as well as social and individual point of view. So much so, indeed, that the Chief Magistrate of our country, in his last annual message, estimates the increased duration of human life, "known to have already resulted from the scientific and hygienic improvements of the last fifty years, to be nearly sufficient to keep up the ratio of national growth" for the next fifty, or perhaps hundred years, even though emigration from foreign countries to this should very largely diminish.

Thus far we have scrupulously avoided reference to the employment of particular substances as curatives. Indeed, it is quite possible to perform the higher parts of a physician's duty without recurring to special medicines; for those who suppose that the art of medicine consists solely, or even in greatest part, in the administration of drugs, entertain but a limited conception of its real character. Unfortunately, even otherwise intelligent medical men are liable to fall into this error. The dispensing of medicines to patients, although it may be necessary, should always be looked upon as the enlightened

surgeon looks upon an operation for the removal of a surface or part he has failed to cure. The operation may be indispensable, and the judgement displayed in determining this fact, and the skill of the performance may properly entitle the operator to eulogy and repute: but still, as the whole body is better than a part, there is something lacking to perfection.—So in the exhibition of drugs, there is ever involved a confession that the calm forces of life and action are beyond our control. "Nature is ever busy," as Dr. DIXON beautifully remarks, "by the silent operation of her own forces, endeavoring to cure disease. Her medicines are air, warmth, food, water, exercise and sleep. Their use is directed by *instinct*, and that man is most worthy the name of physician, who most reveres its unerring laws."

That which is technically termed the *regimen*, most undeniably, is a point of chief interest. The control or regulation of all those impressing agents "external to the body or inherent in it: the air which surrounds it: the food which supports it; the exercise which promotes its actions; the sleep which after labor refreshes it; the mind which governs and directs its voluntary actions and ennobles it; and all the inherited or congenital peculiarities to which it is liable, as well as all the accidents to which it is exposed in its progress from the helplessness of infancy to the second helplessness of old age."—Were these matters fully appreciated, little is hazarded in the assertion, that the range of application of drugs, under whatsoever therapeutic school, would be wonderfully circumscribed. This is the course which nature points out, though it never suggested the introduction of substances into the system which form no part of its integral composition. This is that portion of our art which bears that relation to nature which in the "Winter's Tale," Shakspeare has so exquisitely defined:

"PERDITA. I have heard it said,
There is an art, which, * * * shares
With great creating nature.

"POLIXENES. Say, there be,
Yet nature is made better by no mean,
But nature makes that mean: so o'er that art,
Which, you say, adds to nature, is an art
Which nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock;
And make conceive a bark of baser kind
By bud of nobler race; this is an art
Which does mend nature,—change it rather; but
The art itself is nature."

But how happens it, that since most drugs form no part of healthy organism, neither are needed to influence it in health, nor are pointed out by instinct as opponents to disease—that they have come in to form so large a part of the modes of cure. The answer must be somewhat discursive.

There have been, in all ages, two prominent schools of medical doctrine, and all varieties of belief and practice have sprung into being upon the basis of one or both of these.

One is characteristic of a rude, uncultivated state of society—the other of a higher stage of enlightenment. The first may be termed the Empirical school—the second, the Rational.

By accident, or otherwise, peculiar substances taken into the system, have been followed by the relief of existing disease. The instances of relief accumulating form the data, consideration of which leads to the administration of the same articles in similar derangements. Thus an empirical system of practice is established, the sole support of which is the mere sequence of health after the drug was given—no necessarily existing relation between the phenomena being shown. It is evident that for the elaboration of a system of this kind, but a limited degree of knowledge is necessary. *Post hoc ergo propter hoc*, being the acknowledged law. It is liable to this great error, that, there being no known essential relation between the facts, any principle predicated upon them cannot be extended to new or untried cases without danger of reversed results. Unfortunately, a very large proportion of what is called professional experience, when carefully analyzed, is found in this category. It is but empirical, depending altogether upon observation and analogy, without reference to scientific causation.

On the other hand, Rationalism, with the characteristics of a higher order of thought, looks beyond phenomena to causes, the development of principles and their unerring application to new and untried cases. Beginning, like empiricism, with observation of facts, it seeks to unfold the law that shall, necessarily, include all similar, and even many dissimilar facts. For these, whatever their number, unconnected by reason, can only give a distrusted result. And indeed, it

is difficult in medicine to collect any great number that are homogeneous. Rationalism searches for those properties which may connect the facts under the same law, although apparently dissimilar in character. Thus the principle, legitimately established by Rationalism, is invariably definite and certain in its results : a practice guided by a perfect rationalism, would, so far as it extended be as absolutely certain in issue as a chemical experiment.

But, unfortunately, in medicine the facts are often so involved, intricate and difficult of observation, that safe generalization is quite impossible. Hence temptation has ever been presented to assume mere theories or hypotheses in lieu of well established laws. Thus Dogmatism has supplanted wise Rationalism, and in its effects proved far more disastrous than the crudest Empiricism which, even at the worst, has some foothold in nature and the doctrines of chance in its favor.

We may cite as examples of pure dogmatism, the old formula ; *Contraria contrariis curantur ;* and the later ones ; *Similia similibus curantur ;* " Heat is life and cold is death ; or again : " The cause of all disease is in the blood ;" or yet more recently : " Disease springs not from changes in the tissues of the body, but from original affection of the vital force which causes those tissues to assume their particular material characteristics."

Now each of these statements finds a series of facts, which, taken alone, gives them a degree of plausibility ; but to the careful student of nature, as developed by all the facts and their essential relations, it is unnecessary to remark that they fail of assuming the proper rank of established, indubitable principles.

" Observation," says an acute writer, " is at best only the brute matter of science. Nothing is less practical than a mere fact, until the mind works on it, and gives it a place and a value, according to the principles of the intelligence itself." On the other hand, we may say, that Dogmatism, though involving mental activity, is but a blind intelligence which though practical in result, is practical to dangerous purposes, giving confidence where caution is requisite, begetting fear

where boldness is indispensable, binding the hands in daylight, arming them with a sword in the darkness.

With our existing knowledge of Anatomy, Chemistry, Physiology and Pathology, were Therapeutics now to be first attempted, Rationalism could go no further than to regulate the action of the Vital Stimuli, supplying or abstracting those forces or materials which are normally present to the body. It could never, *a priori*, judge that substances which do not enter into the composition of the body would cure disease. The idea could only be gained from empiric observation, with all the mistakes thus involved. But after facts have accumulated, then Rationalism seeks the connection between the medicament and the disease—or, in technical terms, the Modus Operandi. Until this be discovered, it is clear that administration of the medicine must continue to be, in each new case, simply empirical or experimental, and the result ever indefinite and uncertain.

And here again the inveterate antagonist of progress, the demon Mephistophiles of our medical Faust, is constantly intruding within the domain of legitimate science. Ashamed of honest ignorance, Æsculapius wraps the veil of theory over his eyes to exclude the sight of what he is unable to explain. "It were far better to rest satisfied with the simple truth, and suffer the imputation of advocating a defective system, rather than expose ourselves to the charge of grafting upon the tree of knowledge the barren branches of our conceits."

Empiricism having rendered probable, by accumulation of instances, the curative action of substances, Rationalism undertakes to develop the essential conditions, or Modus Operandi. Knowing the action of organs in health, it first observes the nature of the changes produced by the medicine in health : then it studies the effects in disease : it seeks the organs affected and the kind of action set up : it inquires whether the medicine pervades the blood, whether it is decomposed or whether it combines with constituents of the blood or tissues : whether it remains in the system or passes out, and if the latter, by what channel and in what companionship : it discovers the effect of variations in quantity, in mode of applica-

tion, in change of attendant conditions : it studies then the relation of the action of the medicine to that of the disease, and if it find an essential relation between the two, by which the disease is superceded, it comes to the *rational* conclusion, that the medicine causes the restoration of healthy action, and establishes immutably the proposition that, under similar conditions, the remedy will always produce the same effect. Knowing disease, Rationalism watches the natural tendency to cure, and the coincidence of medicine to the same result. Knowing the action and influences of medicines, both in health and disease, it perceives that many times, far from proving curative, they are of themselves noxious.

Empiricism being semi-blind, and depending upon the number of its cures, seeks to add, one by one, others to its list, unmindful of the injury which its senseless messengers may carry to the healthy parts of the frame. "It is necessary" said Hippocrates, "to be twice prepared with reference to the sick; to aid them, and not to injure them."

Rationalism judges of the applicability of medicines, not only from the fact that recovery ensues upon their use, but moreover, that it takes place as the effect of their use, and more favorably than from any other treatment. Thus Empiricism seeks specifics—Rationalism, potential agencies. Empiricism fills newspapers and books, and the ears of gossips, with details of myriad cases of cures, *et crescit eundo:* Rationalism corrects experience by science and judgment, showing that repetition of errors does not change their nature—that *great cures* are often *great escapes;* that *heroic* practice is oftentimes slaughterous; that *expectant* treatment is often but a "meditation upon death." Empiricism—

> "When the blessed seals
> "That close the pestilence are broke,
> "And crowded cities wail its stroke,

gropes amid the darkness and dust of antiquity for precedents, or, submitting to mere dogmatism, essays vague effort which, if it happens in the catalogue of chances is succeeded by recovery, it at once assumes as *the* remedy for all analogous cases, needing only time for its sponsor, and the baptism of fortui-

tous arithmetic to be received into the family, and called by the name of medicine.

Rationalism under similar circumstances, cautiously studies symptoms and causes, changes and tendency : it is contented to do nothing rather than do harm ; it prefers death by disease to death by medication; it distrusts *perturbation*, but confides in common sense and calm endeavor; it yields to no impulsive assumption, but ever requires a reason for faith. Empiricism decides upon a single ground of reason ; Dogmatism denies reason the elements of proof, and wilfully closes up the avenues to discovery by erecting its pillars of Hercules inscribed :— "This is the uttermost of Truth, beyond is chaos and night :" Rationalism collects judgment from the relation of all facts, separates the certain from the merely possible or probable—law from mere coincidence, and considers itself ever in the youth, not in the maturity of knowledge.

It is fortunate for the profession that experience is, on the whole, more generally trusted than the petrified formulæ which have disfigured the creations of medical mind. Practitioners who have inveterately adhered to their darling dogmas, have ever been found, in practice, to approximate nearer to the truths of nature than their precepts in any measure warrant. On the other hand, the concurrence of instances without contradictory ones, where cure has followed particular medication, even though the reason has not been recognized, will excuse the most scrupulous Rationalists for sometimes venturing out of the somewhat restricted confines of real knowledge, into the uncertain regions of experiment.

Were our list of alleged remedies to be carefully tried by the process we have endeavored to illustrate, very many would be found to lose their boasted rank. And this is precisely the effect which Time, the chiefest of Rationalists, has been found to produce. Truly, the history of drugs has been a "history of variations." How many articles have beenreceived with suspicion, cherished by custom, lauded by familiarity, doubted by analysis and condemned by Time! How few have endured the test until now!

It were well that medical men should learn of Father Time, the oldest of teachers, to discard narrow prejudices or prepossessions, restricted ideas and illiberal notions.

The unfortunate issue of isolated cases, treated by particular methods or medicaments, impresses the passions of the uninstructed, and they are ready to impute the same result to those methods or medicaments, whenever and however applied. A fortunate issue induces contrary belief upon premises equally insufficient.

This idea may be traced in its origin to the popular notion that makes a radical distinction between medicines and pois-

ons—there is none such in nature. "Medicines by improper application become poisons, poisons by proper application become medicines." The power to produce a change of action or condition renders it remedial or noxious according as the change may, or may not be requisite.

The slightest and most transient departure from the normal condition, the most evanescent disturbance of the vital processes, leaves the organism, ever after, less perfect, and destined more surely to rapid decay. How great, therefore, the responsibility involved in medicinal measures; they must either tend to prolong existence or cause its moments to be numbered with fewer characters.

The human hand has constructed some of the most delicate pieces of machinery, wheels within wheels, levers and screws, and all the refinements of invention, combined in most rare and beautiful workmanship; contrived, too, to be moved in the exactest harmony, and to produce the most admirable desired effects. When from any cause a mechanism in its motion does not fulfill the purpose of the artisan, he has but to withdraw the motive power, to repair and readjust, and all goes on again. But in the human framework we may not cause the motive power to cease while we remove that which impairs its action—else it ceases forever: but when all is in motion, while the bloodvessels are thrilling around the life current, while the nerves are awake to the most noiseless impulse, and the "ten thousand strings are all in vibration,—we are to adapt our crude appliances to dislodge that which mars the unison, and endangers the existence of the masterpiece of Omnipotence.

Nevertheless it is not fitting to stand idly by, dismayed at the arduous nature of the task, whilst disease is working its changes upon the instable organism. To combat its incursions, we must be armed at all points, with all the weapons, whatever their nature or origin, which the experience of all time, analyzed, corrected and enlarged by the scientific judgment of the present, may commend to our hands.

Discarding prejudice and passion, let us ever remember:

"There is a soul of goodness even in things evil,"

For what are we and our pitiful ideas, our petty fancies and warped notions, in comparison with TRUTH? "We govern nature in opinions, but are thrall unto her in necessity." Nature and the Truth which is within nature, are one as the sun and the light which surrounds it.

As scattered rays fall upon individual minds, let them not be obliterated by darkened and jealous understandings, but by careful concentration enable light to be reflected along the path of progress and discovery.